



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Note to Reader

January 15, 1998

Background: As part of its effort to involve the public in the implementation of the Food Quality Protection Act of 1996 (FQPA), which is designed to ensure that the United States continues to have the safest and most abundant food supply.

EPA is undertaking an effort to open public dockets on the organophosphate pesticides. These dockets will make available to all interested parties documents that were developed as part of the U.S. Environmental Protection Agency's process for making reregistration eligibility decisions and tolerance reassessments consistent with FQPA. The dockets include preliminary health assessments and, where available, ecological risk assessments conducted by EPA, rebuttals or corrections to the risk assessments submitted by chemical registrants, and the Agency's response to the registrants' submissions.

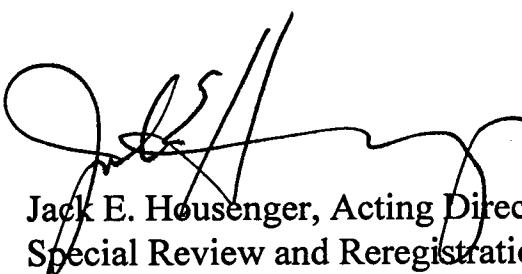
The analyses contained in this docket are preliminary in nature and represent the information available to EPA at the time they were prepared. Additional information may have been submitted to EPA which has not yet been incorporated into these analyses, and registrants or others may be developing relevant information. It's common and appropriate that new information and analyses will be used to revise and refine the evaluations contained in these dockets to make them more comprehensive and realistic. The Agency cautions against premature conclusions based on these preliminary assessments and against any use of information contained in these documents out of their full context. Throughout this process, If unacceptable risks are identified, EPA will act to reduce or eliminate the risks.

There is a 60 day comment period in which the public and all interested parties are invited to submit comments on the information in this docket. Comments should directly relate to this organophosphate and to the information and issues available in the information docket. Once the comment period closes, EPA will review all comments and revise the risk assessments, as necessary.

These preliminary risk assessments represent an early stage in the process by which EPA is evaluating the regulatory requirements applicable to existing pesticides. Through this opportunity for notice and comment, the Agency hopes to advance the openness and scientific soundness underpinning its decisions. This process is designed to assure that America continues to enjoy the safest and most abundant food supply. Through implementation of EPA's tolerance reassessment program under the Food Quality Protection Act, the food supply will become even safer. Leading health experts recommend that all people eat a wide variety of foods, including at least five servings of fruits and vegetables a day.

Note: This sheet is provided to help the reader understand how refined and developed the pesticide file is as of the date prepared, what if any changes have occurred recently, and what new information, if any, is expected to be included in the analysis before decisions are made. **It is not meant to be a summary of all current information regarding the chemical.** Rather, the sheet provides some context to better understand the substantive material in the docket (RED chapters, registrant rebuttals, Agency responses to rebuttals, etc.) for this pesticide.

Further, in some cases, differences may be noted between the RED chapters and the Agency's comprehensive reports on the hazard identification information and safety factors for all organophosphates. In these cases, information in the comprehensive reports is the most current and will, barring the submission of more data that the Agency finds useful, be used in the risk assessments.



Jack E. Housenger, Acting Director
Special Review and Reregistration Division

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

September 28, 1998

MEMORANDUM

SUBJECT: Tetrachlorvinphos. (Chemical ID No. 083701/List A Reregistration Case No. 0321). Acute and Chronic Dietary Exposure and Risk Analyses. No MRID #. DP Barcode No. D249689.

FROM: Christina Swartz, Chemist
Reregistration Branch 1
Health Effects Division (7509C)

THRU: Whang Phang, Ph.D., Branch Senior Scientist
Reregistration Branch 1
Health Effects Division (7509C)

TO: Mark Wilhite/Demson Fuller
Reregistration Branch 1
Special Review and Reregistration Division (7508W)

Background/Action Requested

An HED RED chapter has been completed for the organophosphate active ingredient tetrachlorvinphos (memo, K. Boyle, 4/1/98). Dietary risk assessments were conducted for carcinogenic effects based on the cancer potency factor for tetrachlorvinphos (Q_1^*) and for chronic non-cancer effects based on the established reference dose (RfD). However, since no endpoint for acute dietary risk was deemed appropriate by HED's Hazard Identification Assessment Review Committee (HIARC, review dated 10/8/98), an acute dietary risk assessment was not conducted.

In meetings conducted to assess consistency in selecting endpoints and uncertainty factors for all organophosphates, changes were made to the conclusions of the HIARC (refer to the summary documents, "Hazard Assessment of the Organophosphates: Report of the HIARC" and "FQPA Safety Factor Recommendations for the Organophosphates," B. Tarplee and J. Rowland, 7/7/98 and 8/6/98, respectively). For tetrachlorvinphos, the changes include the selection of an endpoint for acute dietary risk assessment, as well as endpoints for short- and intermediate-term dermal and inhalation risk assessments.

With the selection of an endpoint for acute dietary risk assessment, an acute dietary exposure assessment is required; in addition, new chronic and carcinogenic dietary exposure assessments are required, using updated consumption data and risk assessment software (DEEM™).

Toxicological Information

Memoranda providing details of relevant toxicological information include the HIARC report dated 10/8/97, an RfD Peer Review Report dated 7/7/94, a TESC report dated 8/19/94, a Cancer Peer Review report dated 10/22/97, a HIARC reported dated 7/7/98, and the FQPA Safety Factor Committee report dated 8/6/98.

Acute Dietary

The HED Toxicology Endpoint Selection Committee (TESC) determined that an appropriate endpoint attributable to a single dose (exposure) was not available from the submitted oral toxicology studies; therefore, no acute dietary risk assessment was required (report dated 8/19/94). In 1997, the HIARC reviewed the toxicology database of tetrachlorvinphos to address the increased susceptibility of infants and children as required by FQPA; HIARC concurred with the conclusions of the TESC with respect to the lack of an appropriate endpoint following a single oral exposure (memo, J. Rowland and M. Metzger, 10/8/97).

On May 12-14, 1998, the HIARC reassessed the toxicology database of 40 organophosphate pesticides, including tetrachlorvinphos. One of the objectives of the Committee was to evaluate consistency in the doses and toxicological endpoints selected for dietary (acute and chronic) and non-dietary risk assessments. In order to maintain consistency with other organophosphates, an acute dietary risk assessment is required for tetrachlorvinphos.

A subchronic toxicity study in rats (MRID No. 43371201) was selected for establishing an acute dietary endpoint and no observable adverse effects level (NOAEL). The study was summarized in the HED RED chapter dated 4/1/98. The Committee selected a NOAEL of 4.23 mg/kg/day based on plasma and red blood cell cholinesterase inhibition (ChEI) at 43.2 mg/kg/day (LOEL). Refer to the 7/7/98 document, Hazard Assessment of the Organophosphates: Report of the Hazard Identification Assessment Review Committee. In the subchronic toxicity study, ChEI was observed only at the terminal measurement (i.e., at 13 weeks). However, the HIARC determined that this endpoint is appropriate for acute dietary risk assessment because 1) the Committee presumed that ChEI could have occurred after a single dose as demonstrated with other organophosphates, and 2) clinical signs of ChEI were observed in the acute neurotoxicity study which did not measure cholinesterase activity.

The FQPA Safety Factor Committee determined that the additional 10X factor for the protection of infants and children should be removed due to the completeness of the toxicology database, lack of increased susceptibility in pre- and post-natal studies, and available exposure data (refer to the 8/6/98 report). The uncertainty factors (UFs) for acute dietary risk assessment include a factor of 10X for intra-species variability and an additional 10X for inter-species extrapolation.

Based on a NOAEL of 4.23 mg/kg/day, and on a UF of 100, the acute reference dose (aRfD, NOAEL/UF) is 0.0423 mg/kg/day.

Chronic Dietary

The reference dose (RfD) selected for use in chronic dietary risk assessments was based on histopathology observed at 43.2 mg/kg/day in a chronic toxicity/carcinogenicity study in rats. The NOEL was 4.23 mg/kg/day. The UF for chronic dietary risk assessment is 100 based on a 10X factor to account for intra-species variability and a 10X factor for inter-species extrapolation. The reference dose (RfD, NOEL/UF) for chronic non-cancer dietary risk assessment is 4.23×10^{-2} mg/kg/day.

Carcinogenicity

The HED Cancer Peer Review Committee (CPRC) classified tetrachlorvinphos as a Group C possible human carcinogen based on statistically significant increases in combined hepatocellular adenoma/carcinomas in the female B6C3F1 mouse, suggestive evidence of thyroid c-cell adenomas, and adrenal pheochromocytomas in the rat; in addition, mutagenicity concerns were identified. The CPRC recommended using a cancer potency factor (Q_1^*) of 1.83×10^{-3} (mg/kg/day) $^{-1}$ in Agency risk assessments.

Residue Information

In conjunction with the preparation of the residue chemistry chapter of the HED RED (4/1/98), a tolerance reassessment was completed. HED has recommended revocation of tolerances established in conjunction with application to plants, for which all registrations were voluntarily canceled in 1987. The existing tolerances recommended for revocation are for residues of tetrachlorvinphos *per se* in alfalfa; apples; cherries; field, pop and sweet corn fodder and forage; fresh and sweet corn (K + CWHR); corn grain; cranberries; peaches; pears; and tomatoes.

Based on the livestock metabolism data, the tolerance expression for tetrachlorvinphos [40 CFR § 180.252] should be amended to include tetrachlorvinphos *per se* and its metabolites des-O-methyl tetrachlorvinphos, 1-(2,4,5-trichlorophenyl)ethanol (free and conjugated forms), 2,4,5-trichloroacetophenone, and 1-(2,4,5-trichlorophenyl)ethanediol. Time-limited tolerances for residues in livestock commodities must be maintained, based on feed-through and direct dermal uses on livestock; the recommended time-limited tolerances are based on acceptable metabolism data (refer to the D. Miller memo dated 9/14/95), and exceed existing tolerances for some commodities. Permanent tolerances can be established when adequate magnitude of the residue data for ruminants, swine and poultry are submitted.

Two acute dietary exposure assessments were conducted, one based on existing tolerances, and one based on reassessed tolerances. Three chronic dietary exposure assessments were conducted, one based on existing tolerances, one based on reassessed tolerances, and one based on anticipated residues calculated using percent livestock treated data. All of the exposure analyses incorporated DEEM™ default concentration factors. Since the percent livestock treated data were incorporated into the anticipated residues for livestock commodities, no percent crop treated adjustments were made in the DEEM™ analysis. Finally, for all three chronic exposure assessments, the calculated exposure was compared to both the RfD and the Q_1^* .

Results

In conducting dietary exposure assessments, HED uses consumption data from USDA's Continuing Surveys of Food Intake by Individuals, 1989-1992. The consumption data are coupled with residue data to determine dietary exposure, using DEEM™ Software, purchased under contract from Novigen Sciences, Inc.

For chronic dietary risk assessments, the DEEM™ Software estimates total dietary exposure to pesticides in foods based on mean consumption data. For acute dietary risk assessments, the DEEM™ Software estimates short term (daily) total dietary exposure using individual consumption data. Using toxicological parameters specified by HED's HIARC, DEEM™ expresses dietary risk as a function of dose through dietary exposure.

Based on the chronic dietary exposure analysis and a Q_1^* of 1.83×10^{-3} (mg/kg/day) $^{-1}$, DEEM™ estimated carcinogenic dietary risk for the general U.S. population. Based on existing tolerances, carcinogenic dietary risk was estimated to be 6.26×10^{-5} ; use of reassessed tolerances in the exposure analysis resulted in an estimated carcinogenic risk of 5.02×10^{-6} . Refinement of the exposure analysis with the percent livestock treated data resulted in an estimated carcinogenic dietary risk of 2.16×10^{-7} . Additional exposure and concomitant risk analysis results for tetrachlorvinphos are shown in Tables 1 (chronic non-cancer dietary risk) and 2 (acute dietary risk).

Table 1. Chronic Non-Cancer Dietary Risk, Expressed as a Percentage of the RfD.

Population Subgroup	Percent of RfD, based on		
	Published Tolerances	Reassessed Tolerances	Anticipated Residues
U.S. Pop - 48 states - all seasons	81	6	<1
All infants (<1 year)	153	4	<1
Nursing infants (<1 year)	60	2	<1
Non-nursing infants (<1 year)	192	5	<1
Children (1-6 years)	204	14	<1
Children (7-12 years)	142	9	<1
Females (13-19 yrs/not preg. or nursing)	73	6	<1
Males (13-19 years)	96	7	<1

Table 2. Acute Dietary Exposure/Acute Dietary Risk Expressed as a Percentage of the Acute Dietary RfD.

Population Subgroup	Published Tolerances [99.9th Percentile]		Reassessed Tolerances [99.9th Percentile]	
	Exposure (mg/kg/day)	% aRfD	Exposure (mg/kg/day)	% aRfD
U.S. pop - all seasons	0.360725	853	0.023278	55
All infants (<1 yr)	0.618855	1463	0.025864	61
Nursing infants (<1yr)	0.584849	1383	0.013685	32
Non-nursing infants (<1 yr)	0.573858	1357	0.025541	60
Children (1-6 yrs)	0.527648	1247	0.034018	80
Children (7-12 yrs)	0.314254	743	0.024028	57
Females (13-19 yrs)	0.227830	539	0.016028	38
Females (13-50 yrs)	0.185334	438	0.016170	38
Males (13-19 yrs)	0.197076	466	0.016088	38
Males (20+ yrs)	0.165981	392	0.019239	45

Conclusion

Based on reassessed tolerances and anticipated residues, estimated dietary exposure and concomitant risk are below the Agency's level of concern for tetrachlorvinphos for acute and chronic (cancer and non-cancer) dietary exposure.

Refer to the attached analyses for details.

Attachments: DEEM™ Dietary Exposure Analyses

Attachment 1: Chronic Analysis, Existing Tolerances.

Attachment 2: Chronic Analysis, Reassessed Tolerances (7/6/94 Residue Chemistry Chapter; 4/1/98 HED RED Chapter).

Attachment 3: Chronic Analysis, Anticipated Residues (incorporated as per D. Miller memo dated 9/14/95).

Attachment 4: Acute Analysis, Existing Tolerances.

Attachment 5: Acute Analysis, Reassessed Tolerances.

Secondary Review: Brian Steinwand: 09/18/98 Doug Dotson: 09/23/98

cc (with attachment): Reviewer (CSwartz); Brian Steinwand (CEB1/HED, 7509C)

cc (without attachment): Christine Olinger (RRB1/HED); List A File; SF

7509C:CSwartz:RRB1:CM2:Rm 804F:703 305 5877:08/21/98

Attachment 1: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Existing Tolerances.

U. S. Environmental Protection Agency Ver. 6.12
DEEM89N CHRONIC analysis for TETRACHLORVINPHOS (1989-92 data)
Residue file name: 083701R Adjustment factor #2 NOT used.
Analysis Date 08-12-1998 Residue file dated: 08-12-1998/15:19:56/8
Reference dose (RfD, CHRONIC) = 0.042300 mg/kg body-wt/day
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Similar to Analysis 1 in 4/1/98 RED, TMRC based on published uses

Residue file listing

Food Code	EPA Code	Crop Group	Food Name	Residue (ppm)	Adj. #1	Fctr #2
8	01010AA	A	CRANBERRIES	10.000000	1.00	1.00
9	01010JA	A	CRANBERRIES- JUICE	10.000000	1.10	1.00
52	04001AA	L	APPLES	10.000000	1.00	1.00
56	04003AA	L	PEARS	10.000000	1.00	1.00
57	04003DA	L	PEARS- DRIED	10.000000	6.25	1.00
61	05002AA	M	CHERRIES	10.000000	1.00	1.00
62	05002DA	M	CHERRIES- DRIED	10.000000	4.00	1.00
63	05002JA	M	CHERRIES- JUICE	10.000000	1.50	1.00
65	05004AA	M	PEACHES	0.100000	1.00	1.00
66	05004DA	M	PEACHES- DRIED	0.100000	7.00	1.00
159	11005AA	I	TOMATOES- WHOLE	5.000000	1.00	1.00
160	11005JA	I	TOMATOES- JUICE	5.000000	1.50	1.00
161	11005RA	I	TOMATOES- PUREE	5.000000	3.30	1.00
162	11005TA	I	TOMATOES- PASTE	5.000000	5.40	1.00
163	11005UA	I	TOMATOES- CATSUP	5.000000	2.50	1.00
238	15005AA	O	CORN/SWEET	10.000000	1.00	1.00
266	24002EA	O	CORN GRAIN- ENDOSPERM	10.000000	1.00	1.00
267	24002HA	O	CORN GRAIN- BRAN	10.000000	1.00	1.00
268	24002SA	O	CORN GRAIN/SUGAR/HFCS	10.000000	1.50	1.00
289	270020A	O	CORN GRAIN- OIL	10.000000	1.00	1.00
318	50000DB	X	MILK- NONFAT SOLIDS	0.500000	1.00	1.00
319	50000FA	X	MILK- FAT SOLIDS	0.500000	1.00	1.00
320	50000SA	X	MILK SUGAR (LACTOSE)	0.500000	1.00	1.00
324	53001FA	U	BEEF- FAT W/O BONES	1.500000	1.00	1.00
330	53002FA	U	GOAT- FAT W/O BONE	0.500000	1.00	1.00
338	53005FA	U	SHEEP- FAT W/O BONE	0.500000	1.00	1.00
344	53006FA	U	PORK- FAT W/O BONE	1.500000	1.00	1.00
362	55013MA	V	POULTRY- OTHER- FAT W/O BONES	0.750000	1.00	1.00
363	55014AA	X	EGGS- WHOLE	0.100000	1.00	1.00
388	24002MD	O	CORN GRAIN/SUGAR- MOLASSES	10.000000	1.50	1.00
389	01010JC	A	CRANBERRIES- JUICE- CONCENTRATE	10.000000	3.30	1.00
398	50000WA	X	MILK- BASED WATER	0.500000	1.00	1.00
402	05004JA	M	PEACHES- JUICE	0.100000	1.00	1.00
404	04003NA	L	PEARS- JUICE	10.000000	1.00	1.00
423	11005DA	I	TOMATOES- DRIED	5.000000	14.30	1.00

Attachment 1: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Existing Tolerances.

U. S. Environmental Protection Agency Ver. 6.12
DEEM89N CHRONIC analysis for TETRACHLORVINPHOS (1989-92 data)
Residue file name: 083701R Adjustment factor #2 NOT used.
Analysis Date 08-12-1998 Residue file dated: 08-12-1998/15:19:56/8
Reference dose (RfD, CHRONIC) = 0.042300 mg/kg body-wt/day
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Similar to Analysis 1 in 4/1/98 RED, TMRC based on published uses

Total exposure by population subgroup

Population Subgroup	mg/kg body wt/day	Total Exposure Percent of Rfd
U. S. Pop - 48 states - all seasons	0.034180	80.8%
U. S. Population - spring season	0.032754	77.4%
U. S. Population - summer season	0.033437	79.0%
U. S. Population - autumn season	0.037169	87.9%
U. S. Population - winter season	0.033228	78.6%
Northeast region	0.034463	81.5%
Midwest region	0.035733	84.5%
Southern region	0.033274	78.7%
Western region	0.033569	79.4%
Pacific Region	0.033116	78.3%
Hispanics	0.034667	82.0%
Non-hispanic whites	0.034412	81.4%
Non-hispanic blacks	0.032411	76.6%
Non-hispanic other than black or white	0.033922	80.2%
All infants (<1 year)	0.064609	152.7%
Nursing infants (<1 year)	0.025263	59.7%
Non-nursing infants (<1 year)	0.081169	191.9%
Children (1-6 years)	0.086412	204.3%
Children (7-12 years)	0.059975	141.8%
Females (13-19 yrs/not preg. or nursing)	0.030929	73.1%
Females (20+ years/not preg. or nursing)	0.022239	52.6%
Females (13-50 years)	0.024599	58.2%
Females (13+/pregnant/not nursing)	0.027032	63.9%
Females (13+/nursing)	0.031719	75.0%
Males (13-19 years)	0.036470	86.2%
Males (20+ years)	0.024221	57.3%
Seniors (55+)	0.020613	48.7%

Attachment 1: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Existing Tolerances.

U. S. Environmental Protection Agency Ver. 6.12
 DEM89N CHRONIC analysis for TETRACHLORVINPHOS (1989-92 data)
 Residue file name: 083701R Adjustment factor #2 NOT used.
 Analysis Date 09-14-1998 Residue file dated: 09-14-1998/15:51:54/8
 Q* = 0.001830
 COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
 COMMENT 2: Based on Existing tolerances (comparable to Analysis 1 in 4/1/98 RED)

Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Lifetime risk (Q*=0.001830)
U. S. Pop - 48 states - all seasons	0.034180	6.26E-05
U. S. Population - spring season	0.032754	5.99E-05
U. S. Population - summer season	0.033437	6.12E-05
U. S. Population - autumn season	0.037169	6.80E-05
U. S. Population - winter season	0.033228	6.08E-05
Northeast region	0.034463	6.31E-05
Midwest region	0.035733	6.54E-05
Southern region	0.033274	6.09E-05
Western region	0.033569	6.14E-05
Pacific Region	0.033116	6.06E-05
Hispanics	0.034667	6.34E-05
Non-hispanic whites	0.034412	6.30E-05
Non-hispanic blacks	0.032411	5.93E-05
Non-hispanic other than black or white	0.033922	6.21E-05
All infants (<1 year)	0.064609	1.18E-04
Nursing infants (<1 year)	0.025263	4.62E-05
Non-nursing infants (<1 year)	0.081169	1.49E-04
Children (1-6 years)	0.086412	1.58E-04
Children (7-12 years)	0.059975	1.10E-04
Females (13-19 yrs/not preg. or nursing)	0.030929	5.66E-05
Females (20+ years/not preg. or nursing)	0.022239	4.07E-05
Females (13-50 years)	0.024599	4.50E-05
Females (13+/pregnant/not nursing)	0.027032	4.95E-05
Females (13+/nursing)	0.031719	5.80E-05
Males (13-19 years)	0.036470	6.67E-05
Males (20+ years)	0.024221	4.43E-05
Seniors (55+)	0.020613	3.77E-05

Attachment 2: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Reassessed Tolerances (4/1/98 HED RED Chapter).

U. S. Environmental Protection Agency
DEME89N CHRONIC analysis for TETRACHLORVINPHOS Ver. 6.12
Residue file name: 083701RR (1989-92 data)
Residue file dated: 08-12-1998/15:17:34/8
Adjustment factor #2 NOT used.
Analysis Date 08-12-1998 Residue file dated: 08-12-1998/15:17:34/8
Reference dose (RfD, CHRONIC) = 0.042300 mg/kg body-wt/day
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Based on tolerance reassessment from 4/1/98 RED

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Residue file listing

Food Code	EPA Code	Crop Group	Food Name	Residue (ppm)	Adj. #1	Fctrs #2
318	50000DB	X	MILK-NONFAT SOLIDS	0.050000	1.00	1.00
319	50000FA	X	MILK-FAT SOLIDS	0.050000	1.00	1.00
320	50000SA	X	MILK SUGAR (LACTOSE)	0.050000	1.00	1.00
321	53001BA	U	BEEF-MEAT BYPRODUCTS	1.000000	1.00	1.00
322	53001BB	U	BEEF-OTHER ORGAN MEATS	1.000000	1.00	1.00
323	53001DA	U	BEEF-DRIED	2.000000	1.92	1.00
324	53001FA	U	BEEF-FAT W/O BONES	0.200000	1.00	1.00
325	53001KA	U	BEEF-KIDNEY	1.000000	1.00	1.00
326	53001LA	U	BEEF-LIVER	0.500000	1.00	1.00
327	53001MA	U	BEEF-LEAN(FAT/FREE) W/O BONES	2.000000	1.00	1.00
328	53002BA	U	GOAT-MEAT BYPRODUCTS	1.000000	1.00	1.00
329	53002BB	U	GOAT-OTHER ORGAN MEATS	1.000000	1.00	1.00
330	53002FA	U	GOAT-FAT W/O BONE	0.200000	1.00	1.00
331	53002KA	U	GOAT-KIDNEY	1.000000	1.00	1.00
332	53002LA	U	GOAT-LIVER	0.500000	1.00	1.00
333	53002MA	U	GOAT-LEAN (FAT/FREE) W/O BONE	2.000000	1.00	1.00
336	53005BA	U	SHEEP-MEAT BYPRODUCTS	1.000000	1.00	1.00
337	53005BB	U	SHEEP-OTHER ORGAN MEATS	1.000000	1.00	1.00
338	53005FA	U	SHEEP-FAT W/O BONE	7.000000	1.00	1.00
339	53005KA	U	SHEEP-KIDNEY	1.000000	1.00	1.00
340	53005LA	U	SHEEP-LIVER	0.500000	1.00	1.00
341	53005MA	U	SHEEP-LEAN (FAT FREE) W/O BONE	3.000000	1.00	1.00
342	53006BA	U	PORK-MEAT BYPRODUCTS	1.000000	1.00	1.00
343	53006BB	U	PORK- OTHER ORGAN MEATS	1.000000	1.00	1.00
344	53006FA	U	PORK-FAT W/O BONE	0.200000	1.00	1.00
345	53006KA	U	PORK-KIDNEY	1.000000	1.00	1.00
346	53006LA	U	PORK-LIVER	0.500000	1.00	1.00
347	53006MA	U	PORK-LEAN (FAT FREE) W/O BONE	2.000000	1.00	1.00
360	55013BA	V	POULTRY- OTHER-LEAN (FAT FREE)	3.000000	1.00	1.00
361	55013LA	V	POULTRY- OTHER-GIBLETS(LIVER)	2.000000	1.00	1.00
362	55013MA	V	POULTRY- OTHER-FAT W/O BONES	7.000000	1.00	1.00
363	55014AA	X	EGGS-WHOLE	0.200000	1.00	1.00
398	50000WA	X	MILK-BASED WATER	0.050000	1.00	1.00

Attachment 2: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Reassessed Tolerances (4/1/98 HED RED Chapter).

U. S. Environmental Protection Agency
DEME89N CHRONIC analysis for TETRACHLORVINPHOS Ver. 6.12
Residue file name: 083701RR (1989-92 data)
Residue file dated: Adjustment factor #2 NOT used.
Analysis Date 08-12-1998 Residue file dated: 08-12-1998/15: 17: 34/8
Reference dose (RfD, CHRONIC) = 0.042300 mg/kg body-wt/day
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Based on tolerance reassessment from 4/1/98 RED

Total exposure by population subgroup

Total Exposure		
Population Subgroup	mg/kg body wt/day	Percent of Rfd
U. S. Pop - 48 states - all seasons	0.002742	6. 5%
U. S. Population - spring season	0.002733	6. 5%
U. S. Population - summer season	0.002767	6. 5%
U. S. Population - autumn season	0.002737	6. 5%
U. S. Population - winter season	0.002728	6. 4%
Northeast region	0.002633	6. 2%
Midwest region	0.002946	7. 0%
Southern region	0.002829	6. 7%
Western region	0.002460	5. 8%
Pacific Region	0.002389	5. 6%
Hispanics	0.003070	7. 3%
Non-hispanic whites	0.002676	6. 3%
Non-hispanic blacks	0.002869	6. 8%
Non-hispanic other than black or white	0.003044	7. 2%
All infants (<1 year)	0.001683	4. 0%
Nursing infants (<1 year)	0.000807	1. 9%
Non-nursing infants (<1 year)	0.002052	4. 9%
Children (1-6 years)	0.005766	13. 6%
Children (7-12 years)	0.003972	9. 4%
Females (13-19 yrs/not preg. or nursing)	0.002510	5. 9%
Females (20+ years/not preg. or nursing)	0.001905	4. 5%
Females (13-50 years)	0.002083	4. 9%
Females (13+/pregnant/not nursing)	0.002157	5. 1%
Females (13+/nursing)	0.002116	5. 0%
Males (13-19 years)	0.003073	7. 3%
Males (20+ years)	0.002505	5. 9%
Seniors (55+)	0.001919	4. 5%

Attachment 2: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Reassessed Tolerances (4/1/98 HED RED Chapter).

U. S. Environmental Protection Agency
DEME89N CHRONIC analysis for TETRACHLORVINPHOS Ver. 6.12
Residue file name: 083701RR (1989-92 data)
Analysis Date 09-14-1998 Adjustment factor #2 NOT used.
Residue file dated: 09-14-1998/15: 56: 42/8
Q* = 0.001830
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Based on Reassessed tolerances (See Summary table in 4/1/98 RED)

Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Lifetime risk (Q*=0.001830)
U. S. Pop - 48 states - all seasons	0.002742	5.02E-06
U. S. Population - spring season	0.002733	5.00E-06
U. S. Population - summer season	0.002767	5.06E-06
U. S. Population - autumn season	0.002737	5.01E-06
U. S. Population - winter season	0.002728	4.99E-06
Northeast region	0.002633	4.82E-06
Midwest region	0.002946	5.39E-06
Southern region	0.002829	5.18E-06
Western region	0.002460	4.50E-06
Pacific Region	0.002389	4.37E-06
Hispanics	0.003070	5.62E-06
Non-hispanic whites	0.002676	4.90E-06
Non-hispanic blacks	0.002869	5.25E-06
Non-hispanic other than black or white	0.003044	5.57E-06
All infants (<1 year)	0.001683	3.08E-06
Nursing infants (<1 year)	0.000807	1.48E-06
Non-nursing infants (<1 year)	0.002052	3.76E-06
Children (1-6 years)	0.005766	1.06E-05
Children (7-12 years)	0.003972	7.27E-06
Females (13-19 yrs/not preg. or nursing)	0.002510	4.59E-06
Females (20+ years/not preg. or nursing)	0.001905	3.49E-06
Females (13-50 years)	0.002083	3.81E-06
Females (13+/pregnant/not nursing)	0.002157	3.95E-06
Females (13+/nursing)	0.002116	3.87E-06
Males (13-19 years)	0.003073	5.62E-06
Males (20+ years)	0.002505	4.58E-06
Seniors (55+)	0.001919	3.51E-06

Attachment 3: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Anticipated Residues (D. Miller memo dated 9/14/95)

U. S. Environmental Protection Agency
DEEM89N CHRONIC analysis for TETRACHLORVINPHOS Ver. 6.12
Residue file name: 083701AR (1989-92 data)
Residue file dated: 08-12-1998/16:23:03/8
Adjustment factor #2 NOT used.
Analysis Date 08-12-1998
Reference dose (RfD, CHRONIC) = 0.042300 mg/kg body-wt/day
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Using ARs incorporating BEAD livestock treatment data (DJM, 9/14/95)

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Residue file listing

Food Code	EPA Code	Crop Group	Food Name	Residue (ppm)	Adj. #1	Fctrs #2
318	50000DB	X	MILK-NONFAT SOLIDS	0.005000	1.00	1.00
319	50000FA	X	MILK-FAT SOLIDS	0.005000	1.00	1.00
320	50000SA	X	MILK SUGAR (LACTOSE)	0.005000	1.00	1.00
321	53001BA	U	BEEF-MEAT BYPRODUCTS	0.090000	1.00	1.00
322	53001BB	U	BEEF-OTHER ORGAN MEATS	0.090000	1.00	1.00
323	53001DA	U	BEEF-DRIED	0.077000	1.92	1.00
324	53001FA	U	BEEF-FAT W/O BONES	0.028000	1.00	1.00
325	53001KA	U	BEEF-KIDNEY	0.090000	1.00	1.00
326	53001LA	U	BEEF-LIVER	0.090000	1.00	1.00
327	53001MA	U	BEEF-LEAN(FAT/FREE) W/O BONES	0.077000	1.00	1.00
328	53002BA	U	GOAT-MEAT BYPRODUCTS	0.630000	1.00	1.00
329	53002BB	U	GOAT-OTHER ORGAN MEATS	0.630000	1.00	1.00
330	53002FA	U	GOAT-FAT W/O BONE	0.160000	1.00	1.00
331	53002KA	U	GOAT-KIDNEY	0.630000	1.00	1.00
332	53002LA	U	GOAT-LIVER	0.630000	1.00	1.00
333	53002MA	U	GOAT-LEAN (FAT/FREE) W/O BONE	0.387000	1.00	1.00
342	53006BA	U	PORK-MEAT BYPRODUCTS	0.020000	1.00	1.00
343	53006BB	U	PORK- OTHER ORGAN MEATS	0.020000	1.00	1.00
344	53006FA	U	PORK-FAT W/O BONE	0.005000	1.00	1.00
345	53006KA	U	PORK-KIDNEY	0.020000	1.00	1.00
346	53006LA	U	PORK-LIVER	0.020000	1.00	1.00
347	53006MA	U	PORK-LEAN (FAT FREE) W/O BONE	0.012000	1.00	1.00
360	55013BA	V	POULTRY-OTHER-LEAN (FAT FREE)	0.192000	1.00	1.00
361	55013LA	V	POULTRY-OTHER-GIBLETS(LIVER)	0.140000	1.00	1.00
362	55013MA	V	POULTRY-OTHER-FAT W/O BONES	0.763000	1.00	1.00
363	55014AA	X	EGGS-WHOLE	0.030800	1.00	1.00
398	50000WA	X	MILK-BASED WATER	0.005000	1.00	1.00

Attachment 3: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Anticipated Residues (D. Miller memo dated 9/14/95)

U. S. Environmental Protection Agency
DEME89N CHRONIC analysis for TETRACHLORVINPHOS Ver. 6.12
Residue file name: 083701AR (1989-92 data)
Residue file dated: 08-12-1998/16:23:03/8
Adjustment factor #2 NOT used.
Analysis Date 08-12-1998
Reference dose (RfD, CHRONIC) = 0.042300 mg/kg body-wt/day
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Using ARs incorporating BEAD livestock treatment data (DJM, 9/14/95)

Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U. S. Pop - 48 states - all seasons	0.000118	0.3%
U. S. Population - spring season	0.000118	0.3%
U. S. Population - summer season	0.000120	0.3%
U. S. Population - autumn season	0.000120	0.3%
U. S. Population - winter season	0.000116	0.3%
Northeast region	0.000112	0.3%
Midwest region	0.000127	0.3%
Southern region	0.000119	0.3%
Western region	0.000113	0.3%
Pacific Region	0.000112	0.3%
Hispanics	0.000134	0.3%
Non-hispanic whites	0.000117	0.3%
Non-hispanic blacks	0.000113	0.3%
Non-hispanic other than black or white	0.000127	0.3%
All infants (<1 year)	0.000111	0.3%
Nursing infants (<1 year)	0.000042	0.1%
Non-nursing infants (<1 year)	0.000140	0.3%
Children (1-6 years)	0.000297	0.7%
Children (7-12 years)	0.000183	0.4%
Females (13-19 yrs/not preg. or nursing)	0.000103	0.2%
Females (20+ years/not preg. or nursing)	0.000077	0.2%
Females (13-50 years)	0.000084	0.2%
Females (13+/pregnant/not nursing)	0.000101	0.2%
Females (13+/nursing)	0.000086	0.2%
Males (13-19 years)	0.000133	0.3%
Males (20+ years)	0.000096	0.2%
Seniors (55+)	0.000077	0.2%

Attachment 3: Tetrachlorvinphos, Chronic Dietary Risk Analysis, Anticipated Residues (D. Miller memo dated 9/14/95)

U. S. Environmental Protection Agency
DEME89N CHRONIC analysis for TETRACHLORVINPHOS Ver. 6.12
Residue file name: 083701AR (1989-92 data)
Analysis Date 09-14-1998 Adjustment factor #2 NOT used.
Residue file dated: 09-14-1998/15:57:30/8
Q* = 0.001830
COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
COMMENT 2: Based on anticipated residues (See DJMiller analysis in 4/1/98 RED)

Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Lifetime risk (Q*=0.001830)
U. S. Pop - 48 states - all seasons	0.000118	2.16E-07
U. S. Population - spring season	0.000118	2.15E-07
U. S. Population - summer season	0.000120	2.19E-07
U. S. Population - autumn season	0.000120	2.19E-07
U. S. Population - winter season	0.000116	2.12E-07
Northeast region	0.000112	2.04E-07
Midwest region	0.000127	2.33E-07
Southern region	0.000119	2.17E-07
Western region	0.000113	2.07E-07
Pacific Region	0.000112	2.05E-07
Hispanics	0.000134	2.45E-07
Non-hispanic whites	0.000117	2.14E-07
Non-hispanic blacks	0.000113	2.07E-07
Non-hispanic other than black or white	0.000127	2.33E-07
All infants (<1 year)	0.000111	2.03E-07
Nursing infants (<1 year)	0.000042	7.71E-08
Non-nursing infants (<1 year)	0.000140	2.56E-07
Children (1-6 years)	0.000297	5.44E-07
Children (7-12 years)	0.000183	3.35E-07
Females (13-19 yrs/not preg. or nursing)	0.000103	1.88E-07
Females (20+ years/not preg. or nursing)	0.000077	1.40E-07
Females (13-50 years)	0.000084	1.53E-07
Females (13+/pregnant/not nursing)	0.000101	1.85E-07
Females (13+/nursing)	0.000086	1.58E-07
Males (13-19 years)	0.000133	2.43E-07
Males (20+ years)	0.000096	1.76E-07
Seniors (55+)	0.000077	1.41E-07

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

U. S. Environmental Protection Agency
 DEM89N Acute analysis for TETRACHLORVINPHOS Ver. 6.12
 Residue file name: 083701R.acx (1989-92 data)
 Adjustment factor #2 NOT used.
 Analysis Date 08-12-1998 Residue file dated: 08-12-1998/15:19:56/8
 Reference dose (RfD, Acute) = 0.042300 mg/kg body-wt/day
 COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
 COMMENT 2: Acute analysis based on existing tolerances

Residue file listing

Food Code	EPA Code	Crop Group	Food Name	Residue (ppm)	Adj. #1	Fctr #2
8	01010AA	A	CRANBERRIES	10.000000	1.00	1.00
9	01010JA	A	CRANBERRIES-JUICE	10.000000	1.10	1.00
52	04001AA	L	APPLES	10.000000	1.00	1.00
56	04003AA	L	PEARS	10.000000	1.00	1.00
57	04003DA	L	PEARS-DRIED	10.000000	6.25	1.00
61	05002AA	M	CHERRIES	10.000000	1.00	1.00
62	05002DA	M	CHERRIES-DRIED	10.000000	4.00	1.00
63	05002JA	M	CHERRIES-JUICE	10.000000	1.50	1.00
65	05004AA	M	PEACHES	0.100000	1.00	1.00
66	05004DA	M	PEACHES-DRIED	0.100000	7.00	1.00
159	11005AA	I	TOMATOES-WHOLE	5.000000	1.00	1.00
160	11005JA	I	TOMATOES-JUICE	5.000000	1.50	1.00
161	11005RA	I	TOMATOES-PUREE	5.000000	3.30	1.00
162	11005TA	I	TOMATOES-PASTE	5.000000	5.40	1.00
163	11005UA	I	TOMATOES-CATSUP	5.000000	2.50	1.00
238	15005AA	O	CORN/SWEET	10.000000	1.00	1.00
266	24002EA	O	CORN GRAIN-ENDOSPERM	10.000000	1.00	1.00
267	24002HA	O	CORN GRAIN-BRAN	10.000000	1.00	1.00
268	24002SA	O	CORN GRAIN/SUGAR/HFCS	10.000000	1.50	1.00
289	270020A	O	CORN GRAIN-OIL	10.000000	1.00	1.00
318	50000DB	X	MILK-NONFAT SOLIDS	0.500000	1.00	1.00
319	50000FA	X	MILK-FAT SOLIDS	0.500000	1.00	1.00
320	50000SA	X	MILK SUGAR (LACTOSE)	0.500000	1.00	1.00
324	53001FA	U	BEEF-FAT W/O BONES	1.500000	1.00	1.00
330	53002FA	U	GOAT-FAT W/O BONE	0.500000	1.00	1.00
338	53005FA	U	SHEEP-FAT W/O BONE	0.500000	1.00	1.00
344	53006FA	U	PORK-FAT W/O BONE	1.500000	1.00	1.00
362	55013MA	V	POULTRY-OTHER-FAT W/O BONES	0.750000	1.00	1.00
363	55014AA	X	EGGS-WHOLE	0.100000	1.00	1.00
388	24002MD	O	CORN GRAIN/SUGAR-MOLASSES	10.000000	1.50	1.00
389	01010JC	A	CRANBERRIES-JUICE-CONCENTRATE	10.000000	3.30	1.00
398	50000WA	X	MILK-BASED WATER	0.500000	1.00	1.00
402	05004JA	M	PEACHES-JUICE	0.100000	1.00	1.00
404	04003NA	L	PEARS-JUICE	10.000000	1.00	1.00
423	11005DA	I	TOMATOES-DRIED	5.000000	14.30	1.00

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

U. S. Environmental Protection Agency
 DEEM ACUTE analysis for TETRACHLORVINPHOS
 Residue file name: 083701r.r91
 Analysis Date: 08-12-1998/16: 05: 06 Residue file dated: 08-12-1998/15: 19: 56/8
 Acute Reference Dose (aRfD) = 0.042300 mg/kg body-wt/day
 Run Comment: Reference doses include UFs of 100 for intra- and inter-
 =====

U. S. pop - all seasons	Daily Exposure Analysis 1/ (mg/kg body-weight/day) per Capita per User	
Mean	0.034146	0.034268
Standard Deviation	0.039312	0.039329
Standard Error	0.000208	0.000208
Percent of aRfD	80.72	81.01

Percent of Person-Days that are User-Days = 99.65%

Estimated percentile of user-days exceeding calculated exposure
 in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.005679	13.43	10.00	0.075287	177.98
80.00	0.009330	22.06	5.00	0.105587	249.62
70.00	0.013097	30.96	2.50	0.139393	329.53
60.00	0.017434	41.22	1.00	0.198506	469.28
50.00	0.022309	52.74	0.50	0.240799	569.26
40.00	0.028468	67.30	0.25	0.301813	713.51
30.00	0.036727	86.82	0.10	0.360865	853.11
20.00	0.049793	117.71			

Estimated percentile of per-capita days exceeding calculated exposure
 in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.005497	13.00	10.00	0.075197	177.77
80.00	0.009226	21.81	5.00	0.105480	249.36
70.00	0.013003	30.74	2.50	0.139272	329.25
60.00	0.017342	41.00	1.00	0.198366	468.95
50.00	0.022223	52.54	0.50	0.240649	568.91
40.00	0.028381	67.09	0.25	0.301597	712.99
30.00	0.036639	86.62	0.10	0.360725	852.78
20.00	0.049700	117.49			

1/ Analysis based on all three-day participant records in CSFII 1989-92 survey.

All infants (<1 year)	Daily Exposure Analysis (mg/kg body-weight/day) per Capita per User	
Mean	0.064643	0.074749
Standard Deviation	0.091670	0.094667
Standard Error	0.003724	0.004132
Percent of aRfD	152.82	176.71

Percent of Person-Days that are User-Days = 86.48%

Attachment 4: Tetrachlorvinphos, Acute Dietary¹ Risk Analysis, Existing Tolerances.

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

All infants (<1 year) (cont'd)

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile % aRfD	Exposure	% aRfD	Percentile % aRfD	Exposure
90. 00	0. 006577	15. 55	10. 00	0. 208376
492. 61				
80. 00	0. 008179	19. 34	5. 00	0. 299004
706. 86				
70. 00	0. 011488	27. 16	2. 50	0. 324932
768. 16				
60. 00	0. 016626	39. 30	1. 00	0. 340488
804. 94				
50. 00	0. 039635	93. 70	0. 50	0. 455651
1077. 19				
40. 00	0. 061651	145. 75	0. 25	0. 561802
1328. 14				
30. 00	0. 086157	203. 68	0. 10	0. 625493
1478. 71				
20. 00	0. 119506	282. 52		

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile % aRfD	Exposure	% aRfD	Percentile % aRfD	Exposure
90. 00	0. 000000	0. 00	10. 00	0. 194482
459. 77				
80. 00	0. 004928	11. 65	5. 00	0. 284835
673. 37				
70. 00	0. 008028	18. 98	2. 50	0. 320878
758. 58				
60. 00	0. 011807	27. 91	1. 00	0. 338867

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

801. 10				
50. 00	0. 021649	51. 18	0. 50	0. 437647
1034. 63				
40. 00	0. 047884	113. 20	0. 25	0. 545207
1288. 91				
30. 00	0. 074664	176. 51	0. 10	0. 618855
1463. 01				
20. 00	0. 109078	257. 87		

Nursing infants (<1 year)	Daily Exposure Analysis (mg/kg body-weight/day) per Capita	per User
Mean	0. 025307	0. 046556
Standard Deviation	0. 071853	0. 092254
Standard Error	0. 005809	0. 010872
Percent of aRfD	59. 83	110. 06

Percent of Person-Days that are User-Days = 54. 36%

Estimated percentile of user-days exceeding calculated exposure in mg/kg body-wt/day and corresponding percent of aRfD

Percentile % aRfD	Exposure	% aRfD	Percentile	Exposure
90. 00	0. 003380	7. 99	10. 00	0. 133679
316. 03				
80. 00	0. 006991	16. 53	5. 00	0. 219558
519. 05				
70. 00	0. 009723	22. 99	2. 50	0. 238705
564. 31				
60. 00	0. 010790	25. 51	1. 00	0. 386616
913. 99				
50. 00	0. 011858	28. 03	0. 50	0. 508077
1201. 13				
40. 00	0. 014507	34. 30	0. 25	0. 568808
1344. 70				
30. 00	0. 030458	72. 00	0. 10	0. 605246
1430. 84				

Attachment 4: Tetrachlorvinphos, Acute Dietary² Risk Analysis, Existing Tolerances.

20. 00 0. 053263 125. 92

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

Nursing infants (<1 year) (cont'd)

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000000	0.00	10.00	0.066155	156.40
80.00	0.000000	0.00	5.00	0.147447	348.58
70.00	0.000000	0.00	2.50	0.222628	526.31
60.00	0.000000	0.00	1.00	0.303818	718.25
50.00	0.002710	6.41	0.50	0.406090	960.02
40.00	0.008743	20.67	0.25	0.517814	1224.15
30.00	0.011304	26.72	0.10	0.584849	1382.62
20.00	0.019622	46.39			

Non-nursing infants (<1 yr)

Daily Exposure Analysis

(mg/kg body-weight/day)
per Capita per User

Mean	0.081199	0.081199
Standard Deviation	0.094036	0.094036
Standard Error	0.004418	0.004418
Percent of aRfD	191.96	191.96

Percent of Person-Days that are User-Days =100.00%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.006826	16.14	10.00	0.224692	531.19
80.00	0.007903	18.68	5.00	0.317042	749.51
70.00	0.011972	28.30	2.50	0.349901	827.19
60.00	0.027774	65.66	1.00	0.367780	869.46
50.00	0.048007	113.49	0.50	0.395900	935.93
40.00	0.067186	158.83	0.25	0.432714	1022.96
30.00	0.099551	235.35	0.10	0.573858	1356.64
20.00	0.132622	313.53			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.006826	16.14	10.00	0.224692	531.19
80.00	0.007903	18.68	5.00	0.317042	749.51
70.00	0.011972	28.30	2.50	0.349901	827.19
60.00	0.027774	65.66	1.00	0.367780	869.46
50.00	0.048007	113.49	0.50	0.395900	935.93
40.00	0.067186	158.83	0.25	0.432714	1022.96
30.00	0.099551	235.35	0.10	0.573858	1356.64
20.00	0.132622	313.53			

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

Children (1- 6 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.086387	0.086437
Standard Deviation	0.069054	0.069043
Standard Error	0.001117	0.001117
Percent of aRfD	204.22	204.34

Percent of Person-Days that are User-Days = 99.94%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.023978	56.69	10.00	0.176601	417.50
80.00	0.034883	82.47	5.00	0.223958	529.45
70.00	0.044175	104.43	2.50	0.280324	662.70
60.00	0.054459	128.74	1.00	0.347885	822.42
50.00	0.065834	155.63	0.50	0.382396	904.01
40.00	0.081311	192.23	0.25	0.421311	996.01
30.00	0.099915	236.20	0.10	0.527690	1247.49
20.00	0.125146	295.85			

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.023853	56.39	10.00	0.176571	417.43
80.00	0.034833	82.35	5.00	0.223931	529.39
70.00	0.044137	104.34	2.50	0.280291	662.63
60.00	0.054423	128.66	1.00	0.347859	822.36
50.00	0.065800	155.56	0.50	0.382376	903.96
40.00	0.081275	192.14	0.25	0.421288	995.95
30.00	0.099882	236.13	0.10	0.527648	1247.40
20.00	0.125117	295.78			

Children (7- 12 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.059963	0.059983
Standard Deviation	0.042525	0.042518
Standard Error	0.000725	0.000725
Percent of aRfD	141.76	141.80

Percent of Person-Days that are User-Days = 99.97%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.018212	43.05	10.00	0.115433	272.89
80.00	0.026003	61.47	5.00	0.142112	335.96
70.00	0.033120	78.30	2.50	0.171602	405.68

Attachment 4: Tetrachlorvinphos, Acute Dietary² Risk Analysis, Existing Tolerances.

60. 00	0. 041390	97. 85	1. 00	0. 210555	497. 77
50. 00	0. 049681	117. 45	0. 50	0. 234227	553. 73
40. 00	0. 060691	143. 48	0. 25	0. 262227	619. 92
30. 00	0. 072215	170. 72	0. 10	0. 314265	742. 94
20. 00	0. 087483	206. 82			

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

Children (7-12 years) (cont'd)

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.018157	42.92	10.00	0.115424	272.87
80.00	0.025982	61.42	5.00	0.142104	335.94
70.00	0.033104	78.26	2.50	0.171592	405.65
60.00	0.041373	97.81	1.00	0.210546	497.74
50.00	0.049667	117.42	0.50	0.234219	553.71
40.00	0.060676	143.44	0.25	0.262217	619.90
30.00	0.072203	170.69	0.10	0.314254	742.92
20.00	0.087473	206.79			

Females (13-19 yrs/np/nm)

**Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User**

Mean	0.030888	0.030950
Standard Deviation	0.026614	0.026604
Standard Error	0.000640	0.000640
Percent of aRfD	73.02	73.17

Percent of Person-Days that are User-Days = 99.80%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.007008	16.57	10.00	0.064951	153.55
80.00	0.011324	26.77	5.00	0.084158	198.96
70.00	0.015666	37.03	2.50	0.099793	235.92
60.00	0.019391	45.84	1.00	0.119144	281.67
50.00	0.023596	55.78	0.50	0.144387	341.34
40.00	0.028299	66.90	0.25	0.203736	481.65
30.00	0.035009	82.76	0.10	0.227862	538.68
20.00	0.045652	107.92			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.006883	16.27	10.00	0.064912	153.46
80.00	0.011255	26.61	5.00	0.084120	198.87
70.00	0.015605	36.89	2.50	0.099762	235.84
60.00	0.019346	45.74	1.00	0.119119	281.60
50.00	0.023554	55.68	0.50	0.144337	341.22
40.00	0.028262	66.81	0.25	0.203618	481.37
30.00	0.034969	82.67	0.10	0.227830	538.61
20.00	0.045609	107.82			

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

Females (13- 50 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.024557	0.024619
Standard Deviation	0.022312	0.022306
Standard Error	0.000219	0.000220
Percent of aRfD	58.05	58.20

Percent of Person-Days that are User-Days = 99.75%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.004887	11.55	10.00	0.052500	124.11
80.00	0.008200	19.39	5.00	0.068506	161.95
70.00	0.011277	26.66	2.50	0.084357	199.42
60.00	0.014600	34.51	1.00	0.104861	247.90
50.00	0.018460	43.64	0.50	0.124099	293.38
40.00	0.022814	53.93	0.25	0.146747	346.92
30.00	0.028645	67.72	0.10	0.185400	438.30
20.00	0.037250	88.06			

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.004775	11.29	10.00	0.052461	124.02
80.00	0.008133	19.23	5.00	0.068465	161.86
70.00	0.011222	26.53	2.50	0.084316	199.33
60.00	0.014549	34.39	1.00	0.104826	247.82
50.00	0.018411	43.53	0.50	0.124050	293.26
40.00	0.022770	53.83	0.25	0.146690	346.78
30.00	0.028600	67.61	0.10	0.185334	438.14
20.00	0.037206	87.96			

Males (13- 19 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.036471	0.036471
Standard Deviation	0.027452	0.027452
Standard Error	0.000703	0.000703
Percent of aRfD	86.22	86.22

Percent of Person-Days that are User-Days = 100.00%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.010177	24.06	10.00	0.072622	171.68
80.00	0.015054	35.59	5.00	0.088348	208.86
70.00	0.020046	47.39	2.50	0.109898	259.81
60.00	0.024498	57.92	1.00	0.131222	310.22

Attachment 4: Tetrachlorvinphos, Acute Dietary² Risk Analysis, Existing Tolerances.

50. 00	0. 029534	69. 82	0. 50	0. 144367	341. 29
40. 00	0. 035107	82. 99	0. 25	0. 165289	390. 75
30. 00	0. 043286	102. 33	0. 10	0. 197076	465. 90
20. 00	0. 053234	125. 85			

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

Males (13- 19 years) (cont' d)

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90. 00	0. 010177	24. 06	10. 00	0. 072622	171. 68
80. 00	0. 015054	35. 59	5. 00	0. 088348	208. 86
70. 00	0. 020046	47. 39	2. 50	0. 109898	259. 81
60. 00	0. 024498	57. 92	1. 00	0. 131222	310. 22
50. 00	0. 029534	69. 82	0. 50	0. 144367	341. 29
40. 00	0. 035107	82. 99	0. 25	0. 165289	390. 75
30. 00	0. 043286	102. 33	0. 10	0. 197076	465. 90
20. 00	0. 053234	125. 85			

Males (20+ years)

**Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User**

Mean	0. 024204	0. 024240
Standard Deviation	0. 021382	0. 021377
Standard Error	0. 000212	0. 000212
Percent of aRfD	57. 22	57. 30

Percent of Person-Days that are User-Days = 99. 85%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90. 00	0. 005041	11. 92	10. 00	0. 051187	121. 01
80. 00	0. 008260	19. 53	5. 00	0. 065717	155. 36
70. 00	0. 011345	26. 82	2. 50	0. 082049	193. 97
60. 00	0. 014769	34. 92	1. 00	0. 105258	248. 84
50. 00	0. 018451	43. 62	0. 50	0. 122202	288. 89
40. 00	0. 022645	53. 53	0. 25	0. 140719	332. 67
30. 00	0. 028437	67. 23	0. 10	0. 166005	392. 45
20. 00	0. 036043	85. 21			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90. 00	0. 004975	11. 76	10. 00	0. 051165	120. 96
80. 00	0. 008223	19. 44	5. 00	0. 065696	155. 31
70. 00	0. 011314	26. 75	2. 50	0. 082025	193. 91
60. 00	0. 014739	34. 84	1. 00	0. 105235	248. 78
50. 00	0. 018425	43. 56	0. 50	0. 122177	288. 84
40. 00	0. 022620	53. 48	0. 25	0. 140692	332. 61
30. 00	0. 028412	67. 17	0. 10	0. 165981	392. 39
20. 00	0. 036021	85. 16			

Attachment 4: Tetrachlorvinphos, Acute Dietary Risk Analysis, Existing Tolerances.

Summary calculations:

	95th Percentile Exposure	% aRfD	99th Percentile Exposure	% aRfD	99. 9 Percentile Exposure	% aRfD
U. S. pop - all seasons:						
	0. 105480	249. 36	0. 198366	468. 95	0. 360725	852. 78
All infants (<1 year):						
	0. 284835	673. 37	0. 338867	801. 10	0. 618855	1463. 01
Nursing infants (<1 year):						
	0. 147447	348. 58	0. 303818	718. 25	0. 584849	1382. 62
Non-nursing infants (<1 yr):						
	0. 317042	749. 51	0. 367780	869. 46	0. 573858	1356. 64
Children (1- 6 years):						
	0. 223931	529. 39	0. 347859	822. 36	0. 527648	1247. 40
Children (7- 12 years):						
	0. 142104	335. 94	0. 210546	497. 74	0. 314254	742. 92
Females (13- 19 yrs/np/nn):						
	0. 084120	198. 87	0. 119119	281. 60	0. 227830	538. 61
Females (13- 50 years):						
	0. 068465	161. 86	0. 104826	247. 82	0. 185334	438. 14
Males (13- 19 years):						
	0. 088348	208. 86	0. 131222	310. 22	0. 197076	465. 90
Males (20+ years):						
	0. 065696	155. 31	0. 105235	248. 78	0. 165981	392. 39

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

U. S. Environmental Protection Agency
 DEM89N Acute analysis for TETRACHLORVINPHOS Ver. 6.12
 Residue file name: 083701RR.acx (1989-92 data)
 Adjustment factor #2 NOT used.
 Analysis Date 08-12-1998 Residue file dated: 08-12-1998/15: 17: 34/8
 Reference dose (RfD, Acute) = 0.042300 mg/kg body-wt/day
 COMMENT 1: Reference doses include UFs of 100 for intra- and inter-
 COMMENT 2: Based on tolerance reassessment from 4/1/98 RED

Residue file listing

Food Code	EPA Code	Crop Group	Food Name	Residue (ppm)	Adj. #1	Fctrs #2
318	50000DB	X	MILK-NONFAT SOLIDS	0.050000	1.00	1.00
319	50000FA	X	MILK-FAT SOLIDS	0.050000	1.00	1.00
320	50000SA	X	MILK SUGAR (LACTOSE)	0.050000	1.00	1.00
321	53001BA	U	BEEF-MEAT BYPRODUCTS	1.000000	1.00	1.00
322	53001BB	U	BEEF- OTHER ORGAN MEATS	1.000000	1.00	1.00
323	53001DA	U	BEEF- DRIED	2.000000	1.92	1.00
324	53001FA	U	BEEF- FAT W/O BONES	0.200000	1.00	1.00
325	53001KA	U	BEEF- KIDNEY	1.000000	1.00	1.00
326	53001LA	U	BEEF- LIVER	0.500000	1.00	1.00
327	53001MA	U	BEEF- LEAN (FAT/FREE) W/O BONES	2.000000	1.00	1.00
328	53002BA	U	GOAT- MEAT BYPRODUCTS	1.000000	1.00	1.00
329	53002BB	U	GOAT- OTHER ORGAN MEATS	1.000000	1.00	1.00
330	53002FA	U	GOAT- FAT W/O BONE	0.200000	1.00	1.00
331	53002KA	U	GOAT- KIDNEY	1.000000	1.00	1.00
332	53002LA	U	GOAT- LIVER	0.500000	1.00	1.00
333	53002MA	U	GOAT- LEAN (FAT/FREE) W/O BONE	2.000000	1.00	1.00
336	53005BA	U	SHEEP- MEAT BYPRODUCTS	1.000000	1.00	1.00
337	53005BB	U	SHEEP- OTHER ORGAN MEATS	1.000000	1.00	1.00
338	53005FA	U	SHEEP- FAT W/O BONE	7.000000	1.00	1.00
339	53005KA	U	SHEEP- KIDNEY	1.000000	1.00	1.00
340	53005LA	U	SHEEP- LIVER	0.500000	1.00	1.00
341	53005MA	U	SHEEP- LEAN (FAT FREE) W/O BONE	3.000000	1.00	1.00
342	53006BA	U	PORK- MEAT BYPRODUCTS	1.000000	1.00	1.00
343	53006BB	U	PORK- OTHER ORGAN MEATS	1.000000	1.00	1.00
344	53006FA	U	PORK- FAT W/O BONE	0.200000	1.00	1.00
345	53006KA	U	PORK- KIDNEY	1.000000	1.00	1.00
346	53006LA	U	PORK- LIVER	0.500000	1.00	1.00
347	53006MA	U	PORK- LEAN (FAT FREE) W/O BONE	2.000000	1.00	1.00
360	55013BA	V	POULTRY- OTHER- LEAN (FAT FREE)	3.000000	1.00	1.00
361	55013LA	V	POULTRY- OTHER- GIBLETS(LIVER)	2.000000	1.00	1.00
362	55013MA	V	POULTRY- OTHER- FAT W/O BONES	7.000000	1.00	1.00
363	55014AA	X	EGGS- WHOLE	0.200000	1.00	1.00
398	50000WA	X	MILK-BASED WATER	0.050000	1.00	1.00

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

U. S. Environmental Protection Agency
 DEEM ACUTE analysis for TETRACHLORVINPHOS
 Residue file name: 083701rr.r91
 Analysis Date: 08-12-1998/16: 33: 33 Residue file dated: 08-12-1998/15: 17: 34/8
 Acute Reference Dose (aRfD) = 0.042300 mg/kg body-wt/day
 Run Comment: Reference doses include UFs of 100 for intra- and inter-

U. S. pop - all seasons		Daily Exposure Analysis 1/ (mg/kg body-weight/day)	
		per Capita	per User
Mean	0.002739	0.002764	
Standard Deviation	0.003024	0.003027	
Standard Error	0.000016	0.000016	
Percent of aRfD	6.48	6.53	

Percent of Person-Days that are User-Days = 99.09%

Estimated percentile of user-days exceeding calculated exposure
 in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000180	0.43	10.00	0.006408	15.15
80.00	0.000432	1.02	5.00	0.008542	20.19
70.00	0.000802	1.90	2.50	0.010868	25.69
60.00	0.001322	3.12	1.00	0.014439	34.14
50.00	0.001920	4.54	0.50	0.016918	40.00
40.00	0.002552	6.03	0.25	0.019621	46.39
30.00	0.003347	7.91	0.10	0.023301	55.08
20.00	0.004491	10.62			

Estimated percentile of per-capita days exceeding calculated exposure
 in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000165	0.39	10.00	0.006390	15.11
80.00	0.000414	0.98	5.00	0.008522	20.15
70.00	0.000778	1.84	2.50	0.010847	25.64
60.00	0.001293	3.06	1.00	0.014417	34.08
50.00	0.001892	4.47	0.50	0.016895	39.94
40.00	0.002529	5.98	0.25	0.019596	46.33
30.00	0.003325	7.86	0.10	0.023278	55.03
20.00	0.004470	10.57			

1/ Analysis based on all three-day participant records in CSFII 1989-92 survey.

All infants (<1 year)		Daily Exposure Analysis (mg/kg body-weight/day)	
		per Capita	per User
Mean	0.001684	0.002497	
Standard Deviation	0.003333	0.003801	
Standard Error	0.000135	0.000181	
Percent of aRfD	3.98	5.90	

Percent of Person-Days that are User-Days = 67.44%

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

All infants (<1 year) (cont'd)

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000346	0.82	10.00	0.006592	15.58
80.00	0.000485	1.15	5.00	0.010631	25.13
70.00	0.000626	1.48	2.50	0.014608	34.53
60.00	0.000710	1.68	1.00	0.020916	49.45
50.00	0.000843	1.99	0.50	0.022739	53.76
40.00	0.001101	2.60	0.25	0.024491	57.90
30.00	0.001986	4.69	0.10	0.026516	62.69
20.00	0.003979	9.41			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000000	0.00	10.00	0.005330	12.60
80.00	0.000000	0.00	5.00	0.008681	20.52
70.00	0.000000	0.00	2.50	0.012688	29.99
60.00	0.000361	0.85	1.00	0.018885	44.65
50.00	0.000568	1.34	0.50	0.021859	51.68
40.00	0.000719	1.70	0.25	0.023645	55.90
30.00	0.000985	2.33	0.10	0.025864	61.15
20.00	0.002054	4.86			

Nursing infants (<1 year)

**Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User**

Mean	0.000807	0.003188
Standard Deviation	0.002581	0.004329
Standard Error	0.000209	0.000625
Percent of aRfD	1.91	7.54

Percent of Person-Days that are User-Days = 25.32%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000142	0.34	10.00	0.012831	30.33
80.00	0.000321	0.76	5.00	0.013276	31.38
70.00	0.000517	1.22	2.50	0.013498	31.91
60.00	0.000668	1.58	1.00	0.013631	32.23
50.00	0.000781	1.85	0.50	0.013676	32.33
40.00	0.001282	3.03	0.25	0.013698	32.38
30.00	0.003475	8.22	0.10	0.013711	32.41
20.00	0.005163	12.20			

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

Nursing infants (<1 year) (cont'd)

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000000	0.00	10.00	0.001392	3.29
80.00	0.000000	0.00	5.00	0.005355	12.66
70.00	0.000000	0.00	2.50	0.012842	30.36
60.00	0.000000	0.00	1.00	0.013369	31.61
50.00	0.000000	0.00	0.50	0.013545	32.02
40.00	0.000000	0.00	0.25	0.013632	32.23
30.00	0.000000	0.00	0.10	0.013685	32.35
20.00	0.000341	0.81			

Non-nursing infants (<1 yr)

Daily Exposure Analysis

(mg/kg body-weight/day)
per Capita per User

Mean	0.002053	0.002410
Standard Deviation	0.003539	0.003720
Standard Error	0.000166	0.000187
Percent of aRfD	4.85	5.70

Percent of Person-Days that are User-Days = 85.17%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000355	0.84	10.00	0.006088	14.39
80.00	0.000503	1.19	5.00	0.009462	22.37
70.00	0.000640	1.51	2.50	0.014037	33.19
60.00	0.000710	1.68	1.00	0.020583	48.66
50.00	0.000841	1.99	0.50	0.022147	52.36
40.00	0.001099	2.60	0.25	0.024005	56.75
30.00	0.001881	4.45	0.10	0.025742	60.86
20.00	0.003642	8.61			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000000	0.00	10.00	0.005662	13.39
80.00	0.000215	0.51	5.00	0.008875	20.98
70.00	0.000470	1.11	2.50	0.013241	31.30
60.00	0.000634	1.50	1.00	0.019823	46.86
50.00	0.000727	1.72	0.50	0.021874	51.71
40.00	0.000920	2.17	0.25	0.023681	55.98
30.00	0.001473	3.48	0.10	0.025541	60.38
20.00	0.003029	7.16			

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

Children (1-6 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.005764	0.005772
Standard Deviation	0.004834	0.004832
Standard Error	0.000078	0.000078
Percent of aRfD	13.63	13.65

Percent of Person-Days that are User-Days = 99.85%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.001108	2.62	10.00	0.012211	28.87
80.00	0.001748	4.13	5.00	0.015581	36.84
70.00	0.002549	6.03	2.50	0.018767	44.37
60.00	0.003460	8.18	1.00	0.022035	52.09
50.00	0.004556	10.77	0.50	0.025242	59.67
40.00	0.005577	13.18	0.25	0.028653	67.74
30.00	0.007090	16.76	0.10	0.034024	80.43
20.00	0.009249	21.86			

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.001093	2.58	10.00	0.012206	28.86
80.00	0.001741	4.12	5.00	0.015576	36.82
70.00	0.002541	6.01	2.50	0.018763	44.36
60.00	0.003452	8.16	1.00	0.022032	52.09
50.00	0.004548	10.75	0.50	0.025237	59.66
40.00	0.005571	13.17	0.25	0.028648	67.73
30.00	0.007083	16.74	0.10	0.034018	80.42
20.00	0.009243	21.85			

Children (7-12 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.003971	0.003973
Standard Deviation	0.003535	0.003534
Standard Error	0.000060	0.000060
Percent of aRfD	9.39	9.39

Percent of Person-Days that are User-Days = 99.96%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000571	1.35	10.00	0.008667	20.49
80.00	0.001025	2.42	5.00	0.011193	26.46
70.00	0.001548	3.66	2.50	0.013596	32.14

Attachment 5: Tetrachlorvinphos, Acute Dietary³ Risk Analysis, Reassessed Tolerances.

60.00	0.002163	5.11	1.00	0.016046	37.93
50.00	0.003017	7.13	0.50	0.017579	41.56
40.00	0.003949	9.33	0.25	0.019630	46.41
30.00	0.005041	11.92	0.10	0.024030	56.81
20.00	0.006345	15.00			

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

Children (7-12 years) (cont'd)

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000569	1.35	10.00	0.008667	20.49
80.00	0.001023	2.42	5.00	0.011192	26.46
70.00	0.001546	3.66	2.50	0.013595	32.14
60.00	0.002162	5.11	1.00	0.016046	37.93
50.00	0.003015	7.13	0.50	0.017578	41.56
40.00	0.003947	9.33	0.25	0.019629	46.40
30.00	0.005039	11.91	0.10	0.024028	56.80
20.00	0.006344	15.00			

Females (13-19 yrs/np/nm)

Daily Exposure Analysis

(mg/kg body-weight/day)
per Capita per User

Mean	0.002507	0.002518
Standard Deviation	0.002487	0.002486
Standard Error	0.000060	0.000060
Percent of aRfD	5.93	5.95

Percent of Person-Days that are User-Days = 99.55%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000237	0.56	10.00	0.005763	13.62
80.00	0.000512	1.21	5.00	0.007112	16.81
70.00	0.000822	1.94	2.50	0.008919	21.08
60.00	0.001274	3.01	1.00	0.011576	27.37
50.00	0.001811	4.28	0.50	0.014337	33.89
40.00	0.002475	5.85	0.25	0.015528	36.71
30.00	0.003209	7.59	0.10	0.016030	37.90
20.00	0.004067	9.61			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000227	0.54	10.00	0.005755	13.61
80.00	0.000502	1.19	5.00	0.007106	16.80
70.00	0.000813	1.92	2.50	0.008910	21.06
60.00	0.001262	2.98	1.00	0.011568	27.35
50.00	0.001799	4.25	0.50	0.014324	33.86
40.00	0.002462	5.82	0.25	0.015523	36.70
30.00	0.003199	7.56	0.10	0.016028	37.89
20.00	0.004059	9.60			

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

Females (13- 50 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.002080	0.002095
Standard Deviation	0.002240	0.002241
Standard Error	0.000022	0.000022
Percent of aRfD	4.92	4.95

Percent of Person-Days that are User-Days = 99.27%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000117	0.28	10.00	0.005027	11.88
80.00	0.000293	0.69	5.00	0.006380	15.08
70.00	0.000549	1.30	2.50	0.007834	18.52
60.00	0.000885	2.09	1.00	0.010321	24.40
50.00	0.001395	3.30	0.50	0.012067	28.53
40.00	0.002016	4.77	0.25	0.013789	32.60
30.00	0.002694	6.37	0.10	0.016182	38.25
20.00	0.003566	8.43			

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000109	0.26	10.00	0.005016	11.86
80.00	0.000283	0.67	5.00	0.006370	15.06
70.00	0.000536	1.27	2.50	0.007823	18.49
60.00	0.000871	2.06	1.00	0.010309	24.37
50.00	0.001376	3.25	0.50	0.012055	28.50
40.00	0.001997	4.72	0.25	0.013777	32.57
30.00	0.002679	6.33	0.10	0.016170	38.23
20.00	0.003554	8.40			

Males (13- 19 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.003073	0.003078
Standard Deviation	0.002560	0.002559
Standard Error	0.000066	0.000066
Percent of aRfD	7.26	7.28

Percent of Person-Days that are User-Days = 99.84%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000326	0.77	10.00	0.006369	15.06
80.00	0.000835	1.97	5.00	0.007831	18.51
70.00	0.001421	3.36	2.50	0.009057	21.41

Attachment 5: Tetrachlorvinphos, Acute Dietary³ Risk Analysis, Reassessed Tolerances.

60.00	0.001980	4.68	1.00	0.012020	28.42
50.00	0.002614	6.18	0.50	0.014608	34.53
40.00	0.003265	7.72	0.25	0.015533	36.72
30.00	0.003921	9.27	0.10	0.016088	38.03
20.00	0.004768	11.27			

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

Males (13- 19 years) (Cont'd)

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000321	0.76	10.00	0.006366	15.05
80.00	0.000829	1.96	5.00	0.007828	18.51
70.00	0.001415	3.34	2.50	0.009055	21.41
60.00	0.001974	4.67	1.00	0.012017	28.41
50.00	0.002609	6.17	0.50	0.014604	34.52
40.00	0.003261	7.71	0.25	0.015532	36.72
30.00	0.003918	9.26	0.10	0.016088	38.03
20.00	0.004765	11.27			

Males (20+ years)

Daily Exposure Analysis

(mg/kg body-weight/day)

per Capita per User

Mean	0.002503	0.002513
Standard Deviation	0.002461	0.002461
Standard Error	0.000024	0.000024
Percent of aRfD	5.92	5.94

Percent of Person-Days that are User-Days = 99.60%

**Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000181	0.43	10.00	0.005630	13.31
80.00	0.000439	1.04	5.00	0.007214	17.05
70.00	0.000853	2.02	2.50	0.008909	21.06
60.00	0.001366	3.23	1.00	0.011028	26.07
50.00	0.001915	4.53	0.50	0.012533	29.63
40.00	0.002464	5.83	0.25	0.014586	34.48
30.00	0.003142	7.43	0.10	0.019251	45.51
20.00	0.004148	9.81			

**Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding percent of aRfD**

Percentile	Exposure	% aRfD	Percentile	Exposure	% aRfD
90.00	0.000174	0.41	10.00	0.005624	13.30
80.00	0.000431	1.02	5.00	0.007207	17.04
70.00	0.000842	1.99	2.50	0.008902	21.05
60.00	0.001354	3.20	1.00	0.011023	26.06
50.00	0.001904	4.50	0.50	0.012527	29.62
40.00	0.002456	5.81	0.25	0.014578	34.46
30.00	0.003134	7.41	0.10	0.019239	45.48
20.00	0.004140	9.79			

Attachment 5: Tetrachlorvinphos, Acute Dietary Risk Analysis, Reassessed Tolerances.

Summary calculations:

	95th Percentile Exposure	% aRfD	99th Percentile Exposure	% aRfD	99. 9 Percentile Exposure	% aRfD
U. S. pop - all seasons:						
	0. 008522	20. 15	0. 014417	34. 08	0. 023278	55. 03
All infants (<1 year):						
	0. 008681	20. 52	0. 018885	44. 65	0. 025864	61. 15
Nursing infants (<1 year):						
	0. 005355	12. 66	0. 013369	31. 61	0. 013685	32. 35
Non-nursing infants (<1 yr):						
	0. 008875	20. 98	0. 019823	46. 86	0. 025541	60. 38
Children (1- 6 years):						
	0. 015576	36. 82	0. 022032	52. 09	0. 034018	80. 42
Children (7- 12 years):						
	0. 011192	26. 46	0. 016046	37. 93	0. 024028	56. 80
Females (13- 19 yrs/np/nn):						
	0. 007106	16. 80	0. 011568	27. 35	0. 016028	37. 89
Females (13- 50 years):						
	0. 006370	15. 06	0. 010309	24. 37	0. 016170	38. 23
Males (13- 19 years):						
	0. 007828	18. 51	0. 012017	28. 41	0. 016088	38. 03
Males (20+ years):						
	0. 007207	17. 04	0. 011023	26. 06	0. 019239	45. 48